

MVD PFC Progress Report and Next Steps

Dear MVD Customer/Resident,

As you are no doubt aware, low concentrations of certain perfluorinated chemicals (PFC's) have been detected in the Merrimack Village District (MVD) water system. The MVD is served by groundwater pumped from six (6) wells in sand and gravel deposits. The source of these PFC's is most likely airborne contamination originating from an industry in the northeast portion of Merrimack. The contaminants are then carried by precipitation or runoff into our aquifers. The primary contaminant is perfluorooctanoic acid or PFOA. Lower concentrations of perfluorooctane sulfonate (PFOS) have also been found.

PFC's are extremely stable manmade compounds used in the manufacture of non-stick coatings on pots and pans, water resistant clothing, stain resistant carpets, food packaging and a variety of other household and commercial products. Their stability makes them very persistent in the environment. For more information on PFC's please visit the New Hampshire Department of Environmental Services (DES) website and specifically the "Frequently Asked Questions" section.

The US Environmental Protection Agency (EPA) has just (5/19/16) released a new lifetime health advisory level (HA) of 70 parts per trillion (ppt) for PFOA, PFOS and if they co-occur, the sum of PFOA and PFOS concentrations. Prior to this, the only guidance was establishment of a Provisional Health Advisory (PHA) level of 400 ppt for PFOA and 200 ppt for PFOS for short term acute contact. Due to the increasing occurrence of PFOA and the lack of a federal standard, individual states and/or EPA regions have been setting their own PFOA drinking water standards. EPA Region 2 in New York set an Advisory Level of 100 ppt in connection with drinking water contamination in Hoosick Falls, NY. The State of Maine established a standard of 100 ppt for PFOA in drinking water based on analysis of peer reviewed literature. Based on the NY and ME standards, NHDES had established 100 ppt as the interim level at which they recommend people use bottled water for drinking, cooking and brushing their teeth. Given the new PFOA HA set by EPA, NHDES will be lowering the 100 ppt threshold to 70 ppt.

What Lead to the Current Situation?

PFOA was first detected in MVD well water in 2014 as part of sampling and analysis for the Unregulated Contaminant Monitoring Rule (UCMR). The EPA uses this data to monitor the occurrence of contaminants that are not regulated under the National Primary Drinking Water Regulations, are known or anticipated to occur in public water systems, and which may require regulation. On re-sampling PFOA was below detection in four of the six wells. The data from 2014 and 2015 (in ppt) is summarized in the table on the following page. Note that blanks indicate no sample taken. Given that this was an unregulated contaminant and results were either non-detect or well below the 400 ppt PHA, no action was required.

In late February of 2016, the industry referenced above, which is served by the MVD, notified NHDES of the detection of PFOA at about 30 ppt at four of their interior faucets. This testing was done due to detection of PFOA in water supplies in Hoosick Falls, NY and North Bennington, VT; both of which are near other facilities of the same company. In response, on March 9, 2016 NHDES collected samples from the three operational MVD wells (#2, #4 & #5). The other three wells were off line for scheduled maintenance (#3) or construction activity (#7 & #8). Concentrations ranged from 17 ppt in Well #2 to to 90 ppt in Well #4.

PFOA Concentrations (ppt or ng/L) in MVD Wells 2014-2015

| Sample Date | Well #2 | Well #3 | Well #4 | Well #5 | Well #7 | Well #8 |
|-------------|---------|---------|---------|---------|---------|---------|
| 4/14/14 | 15 | | 42* | 42* | | |
| 4/22/14 | | BDL | | | | |
| 7/14/14 | | | | | 26* | 26* |
| 10/7/14 | BDL | BDL | BDL* | BDL* | | |
| 6/15/15 | | | | | 20* | 20* |

^{*}Blended sample (Wells 4&5 or 7&8)

BDL – Below Detection Limit

What Actions Have We Been Taking?

- At their March 21, 2016 meeting the Board of Commissioners authorized our engineering consultant to evaluate both temporary and permanent treatment options for the removal of PFOA from MVD water should this become necessary. The results from this preliminary analysis were presented at the May 16, 2016 Board meeting.
- MVD was represented and took part in public meetings arranged by NHDES in Merrimack and Bedford on March 23, 2016 and March 30, 2016 respectively.
- MVD met several times with the NHDES Commissioner and Division Heads to discuss, among
 other things, the industry's responsibility to pay for the significant costs that MVD has been
 incurring for staff time, sampling, analyses, consultants, and potentially in the future, for
 treatment, if required.
- MVD met with legal counsel and kept them current with on-going developments in the event that a legal remedy is required with the industry.
- MVD has their hydrogeologic consultant evaluating the PFOA contamination.
- MVD met with Senator Ayotte and had discussions with a representative of Senator Shaheen and urged both to apply pressure to EPA to set an enforceable drinking water standard for PFOA which protects the public health.
- Starting on March 31, 2016, MVD and NHDES began weekly PFOA testing of the operational MVD wells. This data can be viewed on the NHDES website under the "Sampling Maps and Data" section. Data can also be seen on water from the MVD system which enters Cabot Preserve, a system run by Pennichuck Water Works but supplied by MVD.
- MVD has been meeting system water demand using a combination of wells with the goal of minimizing the PFOA concentration entering the distribution system. On April 19, 2016, the Iron & Manganese Removal Facility being constructed for Wells #7 & #8 was sufficiently complete to allow use of these wells which have the lowest PFOA concentrations, and now the lowest iron and manganese concentrations. Since that date, system demand has been met primarily with these two wells. Based on recent testing, the concentration of PFOA entering the distribution system from Wells #7 & #8 was 18 ppt and 16 ppt on 4/14/16 and 4/21/16 respectively. As

demands increase going into the summer months, MVD will turn on additional wells as needed to meet demand.

What Actions Will We Take Going Forward?

- MVD will continue to minimize the PFOA entering the distribution system by utilizing the wells with the lowest concentrations.
- MVD will continue weekly sampling of its wells for PFOA.
- MVD will assess levels of PFOA and PFOS in each well to see if treatment is required given the 70 ppt HA level. Based on analysis of results to date, MVD is anticipating that treatment will be required for Wells #4 & #5 but not at the other wells. MVD will work with its consultants to select and design the most appropriate treatment technique for any well where treatment is deemed necessary.
- MVD, either through NHDES's actions, or its own legal remedy, will seek all costs associated with the PFOA contamination or treatment to be paid by the subject industry.
- If needed, MVD will work with Pennichuck Water Works (PWW) to supply supplemental water during design and construction of a treatment plant for Wells #4 & #5 through an existing system interconnection.

We have provided links below for your use in accessing additional information. MVD has always been committed to providing its customers with safe clean drinking water and this commitment continues unabated. Please contact us with any questions or concerns.

MVD Website

http://www.mvdwater.org/

NHDES Website

http://des.nh.gov/organization/commissioner/pfoa.htm

EPA Website

https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/perfluorooctanoic-acid-pfoa-perfluorooctyl-sulfonate

Sincerely yours,

Board of Water Commissioners Merrimack Village District